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ABSTRACT

An exploratory study tracked the year-long development of second graders' use of the decoding by analogy strategy to generate spellings. Subjects, 20 second graders form one intact classroom in a middle-class neighborhood school in the intermountain west, were taught decoding by analogy through direct instruction and by incorporating the strategy into purposeful reading and writing activities throughout the day. Data on students' progress was collected throughout the school year. Initial evidence indicated that students who receive long-term instruction in decoding by analogy used the strategy to generate spellings during writing. Evidence documented in field notes indicated that students also used the strategy collaboratively while writing. Findings suggest that analogy instruction seemed to help students develop an independent strategy for generating spellings. (Contains 16 references and 9 figures reproducing students' writing samples.) (RS)

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Decoding by Analogy: Promoting Independent Strategies for Generating Spellings during Writing

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Decoding by Analogy: Promoting Independent Strategies

for Generating Spellings during Writing

Recent theoretical and empirical work in word identification has led to the development of an instructional strategy called "decoding by analogy" (Gaskins, Gaskins, & Gaskins, 1991). Teachers using this strategy help children learn to identify unfamiliar words by looking for familiar spelling patterns or "chunks." Research indicates that decoding by analogy may be more efficient than traditional word identification strategies because spelling patterns are more reliable than individual letter-sound correspondences (Adams, 1990; Cunningham, 1975-76). Additionally, research suggests that instruction in decoding by analogy may help children develop independence in identifying unknown words (Dewitt, Synder, & Coressel, 1992; Wagstaff & Sinatra, 1993). An efficient, independent means of word identification is a critical component of children's strategies for making sense of text--without this component, children can spend too much time decoding and too little time constructing meaning (Adams, 1990).

Efficient, independent word identification strategies are necessary for children's writing as well. When children lack strategies for spelling words, they may spend too much time focused at the level of letters and sounds rather than on composing meaning. Traditional instructional activities, such as encouraging students to memorize lists of spelling words (Fitzsimmons & Loomer, 1980) have been criticized for having students practice skills that do not transfer to authentic writing situations (McPherson, 1984). Traditional strategies for spelling unknown words, such as utilizing letter-sound correspondence rules or using a dictionary during writing may interrupt the composing process because they take time away from constructing meaning (Newman, 1985). These approaches also have drawn criticism for focusing on writing mechanics rather than the writing process.

Holistic approaches influenced by research on the developmental nature of children's spelling ability support children's use of invented spellings. Teachers using these approaches encourage children to generate spellings based on their growing knowledge of words and letter-sound relationships (Chomsky, 1970; Read, 1971; Teale & Sulzby; 1986). The goal of this approach is to promote

students' focus on meaning--rather than mechanics--as they write, particularly in the early stages of the writing process.

Proponents of holistic approaches may instruct children to "Spell it the way it sounds," or "Ask your neighbor for help." While these strategies address some of the criticisms of traditional approaches to spelling unknown words, they can still present problems for young writers. For example, asking a neighbor how to spell a word may not be successful and furthermore, reliance on this strategy may foster dependency on others. The "Spell it the way it sounds" strategy is inefficient because individual letter-sound correspondences are generally unreliable (Adams, 1990). Additionally, this strategy also may interrupt the process of composing meaning as the writer sounds out unfamiliar words letter-by-letter.

The current study is exploratory in nature and tracks the year-long development of second graders' use of the decoding by analogy strategy to generate spellings. There are several reasons to hypothesize that decoding by analogy may provide students with a successful strategy that they can use to generate spellings when writing. First, decoding by analogy involves learning common spelling patterns, such as *-ail* and *-ate* in the word *tailgate*. These patterns are consistent in spelling and pronunciation across many words (Adams, 1990). Once learned, this knowledge can be applied automatically--a much quicker strategy for spelling words than using a dictionary, sounding out, or asking a neighbor. Further, children can apply patterns to spell many new words on their own, which promotes independence during writing. Most importantly, an independent, efficient strategy for generating spellings will detract only minimally from the process of composing meaning.

Methods

Participants

Participants were 20 second graders from one intact classroom in a middle class neighborhood school in the intermountain west. There were 26 students in the class, but only 20 students were included in the study as five left daily for resource assistance and we did not receive parental permission to include one child's work in the analysis of student progress. The participating students

were heterogenous in their literacy abilities with initial Informal Reading Inventory scores (Sucher-Allred, 1981) ranging from pre-primer to independent second grade levels. Instruction

The decoding by analogy instruction was conducted within the classroom setting as part of the reading/language arts program and was delivered by one of the authors, who was the children's regular classroom teacher. Consistent with her overall instructional philosophy, the teacher took two approaches to teaching decoding by analogy. First, she structured short, daily lessons that followed an explicit instruction model. Some of these lessons (Word Wall selections, chant and check, and reading strategy lessons) were adapted from Gaskin et al. (1991). Others, she developed to meet her particular students' needs. Second, the teacher integrated analogy instruction into purposeful reading and writing activities throughout the day such as: journal writing, book conferences, poetry reading and dramatization, center activities and reading/writing workshop (Atwell, 1987). In doing so, she was able to capitalize on teachable moments to reinforce students' learning through mini-lessons. A brief description of the analogy instruction as it occurred in the present study follows.

Word Wall Selection. At the beginning of the week, five Word Wall words were selected from a poem. These words contain common spelling patterns (rimes) and served as key words for students to use in decoding words by analogy. The words were written on cards, and the rime or rimes in each word were underlined (*ten*, *wait*, *wish*, *fun*, *playground*). The cards were placed on the Word Wall, where the children could use them as references while reading and writing.

Practice Pages. At midweek, students brainstormed words that sound like Word Wall words. They then attempted to spell them on their practice pages which were used later for review. Next, students called out their attempts which were recorded on the board and discussed. Words which have the same sound but a different pattern were put in brackets. The teacher and students then discussed how there can be more than one spelling pattern for one sound and how readers and writers need to be flexible in their use of strategies.

Chant and Check. This is a daily activity which quickly reinforced the new Word Wall patterns for the week. The teacher held up each Word Wall card and asked the students to "Give it a go," or

write the word and underline the pattern from memory. Students then said the word aloud, chanted the spelling, and said the spelling pattern as a whole. Next, the teacher asked the students to volunteer other words that may contain the same pattern and give these words "a go."

Reading Strategy Lesson. Following the chant and check activity, the teacher created a meaningful sentence that contained a challenging word, for example, *We must not be intolerant of others.* Together, the students and teacher would try different strategies to identify the word. When using the analogy strategy, they looked for familiar chunks and brainstorm words that have those patterns. Finally, they read the complete sentence to see if the newly identified word made sense. From there, the class moved directly to a shared reading experience so that the mini-lesson could be applied in the context of connected text.

Challenge Words. Each day before writing workshop, students volunteered challenging words that they might use in the stories they were working on. Their attempts to spell these words were written on the board and discussed. The teacher and students judged the spellings by examining the whole word appearance and by comparing the chunks in the word to Word Wall patterns.

Integrating decoding by analogy into other activities. In addition to the specific mini lessons described above, the analogy strategy was modeled in authentic writing activities. While writing, for example, the teacher would think aloud about the chunks in a word to quickly generate a spelling so the writing process could continue. This opportunity for modeling occurred many times daily in journal writing, reading/writing workshop, message writing, and so on.

Data Collection and Analysis

Specific techniques for instruction, data collection and analysis were developed by the classroom teacher and evolved as the study progressed as described by Spindler & Spindler (1992). Functioning as a participant observer, she gathered data on students' progress throughout the school year. Beginning in September, she collected daily samples of children's writing. She took field notes on students' individual use of the strategy in their reading and writing, and their collaborative efforts to spell unknown words. Additionally, she assessed their reading progress three times over the course of

the year (September, February, and May) using a commercially prepared Informal Reading Inventory (Johns, 1991). Information from this last source is provided simply as a general measure of students' reading abilities and a rough index of their progress during the school year. Student gains in reading ability are not attributed to analogy instruction alone, but rather to the teacher's literacy program as a whole.

All sources of data were analyzed by all three investigators. Daily samples of students' writing from September were compared to samples from mid-way through the school year and the end of the school year for evidence of Word Wall spelling patterns in students' generated spelling. The focus in this analysis was generated spellings because evidence of Word Wall patterns is only apparent in words that are not spelled conventionally. For example, a student may use the Word Wall pattern *-ay* to spell *they*, resulting in the generated spelling *t-h-a-y*. This kind of evidence is not obvious in conventional spellings. While children may in fact, use the patterns to spell conventionally, there is no way to determine this from their writing samples after the fact. Field notes were examined for anecdotal evidence of student use of the analogy strategy during writing activities.

Results

While the work reported here is exploratory, it provides initial evidence that students who receive long term instruction in decoding by analogy do use this strategy to generate spellings during writing. The developmental pattern of strategy use for the second graders in this study varies to some extent across individuals, but the general pattern was one of little use of word wall patterns at the beginning of the school year and increasing use over the course of instruction. However, by the end of the year, evidence of student use of Word Wall patterns began to disappear as their spelling became more and more conventional. While students may have continued to use the patterns at the end of the year, they also may have internalized many conventional spellings.

Evidence from Daily Writing Samples

This section will provide profiles of three students of diverse abilities to illustrate how the group of second graders in the current study used Word Wall patterns in their writing and how their use of this

strategy developed over time.

Jeremy, an low-average achieving reader in this class, began the school year reading independently on the first grade level. Figure 1, a writing sample from September illustrates that he did not initially make use of Word Wall patterns to generate spellings. In fact, many of Jeremy's spellings at this point in the year represent a strategy that Temple and Gillett call "letter-name" spelling. This strategy relies on overgeneralization of the alphabetic principle that letters stand for sound. For example, Jeremy wrote *e-t* for *eat*, *t-r-i-d* for *tried*, *j-u-d* for *grabbed* and *s-i-s* for *shins*.

By mid-year, his writing sample (see Figure 2) shows a decrease in the number of letter-name spellings and an increase in the number of Word Wall patterns in generated spellings. For example, he wrote *n-o-c-k-e-n* for *knockin'*--showing use of the pattern *-ock* from the Word Wall Word *sock* and *-en* from the Word Wall Word *ten*. He also wrote *t-h-a-y* for they applying the pattern *-ay* from the Word Wall Word *playground* and *b-e-f-o-r* using the pattern *-or* from the Word Wall Word *for*. At this point, Jeremy had advanced two grade levels on the IRI.

In a group of journal entries from late May (see Figure 3), Jeremy generated only one spelling, *s-o-c-h-o-o-l* which makes use of the pattern *-ool* from the Word Wall Word. By this point, Jeremy had become a much more conventional speller. He finished second grade reading fluently on the fourth grade level.

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-ow from *snow* and *s-l-a-y* for *sleigh* as in the pattern *-ay* from *playground*. Hillary's IRI performance at this point placed her on a 4th grade independent reading level.

By May, Hillary was reading on a 6th grade instructional reading level. Figure 6, a mid-May journal entry, indicates that by this time Hillary also had become a very conventional speller. Only one word shows a generated spelling: the substitution of *a-r-e* for *our*.

End of the year writing samples from both Jeremy and Hillary show decreased evidence of Word Wall patterns in their generated spellings. One explanation may be that students actually were using the Word Wall patterns to generate some conventional spellings. Another complementary explanation may be, that by the end of the year, students had internalized the conventional spellings for some words and were able to spell them automatically.

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By February, Brett's literacy abilities had grown significantly. He was reading instructionally on grade level. And, a mid-year journal entry (see Figure 8), illustrates that while composing was still difficult, Brett had grasped most of the mechanical basics involved in writing. Letter formation and word boundaries were no longer a problem and his sample contained a number of conventional spellings.

Not surprisingly, we only see one generated spelling that contains a pattern from the Word Wall, *s-p-e-l-i-n-g*, which uses the pattern *-ing* from the Word Wall word *crying*. It may be that in addition to his developmental difficulties, Brett was still catching up with his peers after missing a good deal of analogy instruction.

By the end of the year, Brett was reading independently on grade level and his writing had improved quite dramatically in all respects. As Figure 9 illustrates, Brett's generated spellings included a number of patterns from the analogy instruction. *D-e-p-e-n-s* shows use of the pattern *-en* to spell *depends*; *w-o-o* shows use of the pattern *-oo* to spell *who*, and *y-o-r* shows use of the pattern *-or* to spell *your*. Thus, unlike Jeremy and Hillary, Brett's end of the year generated spellings show evidence of Word Wall patterns. Again, this is not surprising, given his long absence and documented developmental difficulties.

Evidence from Field Notes

Evidence documented in field notes reveals that students also used the strategy collaboratively while writing. They often assisted each other proficiently by using what they had learned during analogy instruction. The following example shows how Hillary helped Jennifer to spell an unfamiliar during writing workshop.

> "Listen for the chunks. Let's see, first we hear *po*, it's *o* like in *Flo*. So that must be P - O . Then we hear *tion* like in the Word Wall word *lotion*, so that must be T - I - O - N. So it must be spelled P - O - T - I - O - N."

Conclusions

The decoding by analogy strategy was designed to provide instruction in decoding for reading. One outcome of analogy instruction seen in the present exploratory study, was its effect on the

development of students' strategies for generating spellings. This finding is consistent with research that suggests that invented spelling and decoding are "mirror-like processes" (Cunningham & Cunningham, 1992).

Analogy instruction seems to help students develop an independent strategy for generating spellings. The analogy strategy is effective because it is quick and easy for students to apply and takes minimal time and attention away from the composing process. In contrast, other strategies such as asking a neighbor or referring to a dictionary are time consuming and likely to be less effective.

Further, as students use the patterns in their generated spelling, their writing becomes more accessible to those with whom they chose to communicate. Peers and adults are more likely to understand their intended message when generated spellings contain patterns that can be readily decoded.

In conclusion, if the analogy strategy does provide an efficient, independent and automatic means for generating spellings, it has the potential to facilitate students spending more time and cognitive resources where they should be spent: on composing meaning.

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Sept. 15, 1992

Title?

starts a sentence

There is a green teacher that eats

everybody ← compound word

every

everybody

Good! I am = I'm

her class

tried eat

she tried to eat me

but I grabbed ? See me?

grabbed

Yes!

then in the shins

shins

See me?

I wish you would write more! What happens next? How did you get away from the teacher?

Then What happened?

See Me! ☺

Figure 2

Robbers Jan 13, 19

dot last night but the night

before 1029 robbers came a-nocen

noun subject

before

at my door. I asked them what

they wanted and this is what

they said C-O-R-N corn

noun subject

corn

I gave them my corn and then

1029 robbers came back the

next day. 1029 robbers came

a nocken at my door I

knockin

ked them what thay

Figure 3

5/19/93
I called Amand B.
last night
5/20/93
were Being taped to day.

5/24/93
Our tramp got set up
after school on friday.
Can you do any tricks on the trampoline?
5/28/93
I fell off my Bike.

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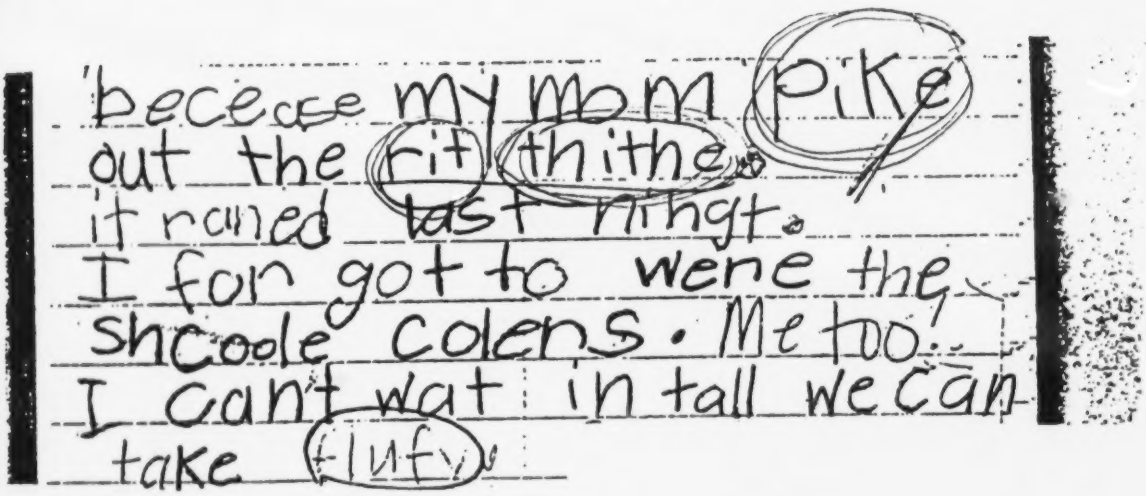
Sept. 93

Figure 4


becece my mom pike
out the fit thithe.
it rained last nihgt.
I for got to were the
shcoole colens. Me too.
I cant wat in tall we can
take fluffy.

Because my mom picked out the right thing. It rained last night. I forgot to wear the school colors. I can't wait until we can take Fluffy.

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Figure 5

The Santa Worm

Dec 21, 1992

Once upon a time, there was a Santa (Adjective) worm and he said, "How can I be Santa Claus (not needed, he is still talking!) I know how to be Santa, I need a hat, and a coat, and some reindeer (compound) raindeer. But wait, I need a sleigh (sleigh) to go. And I need something else, but what is

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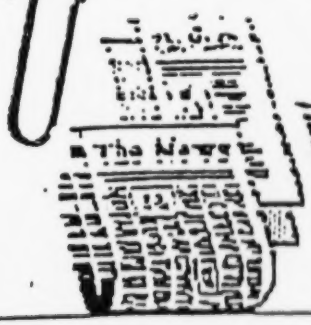
Figure 7



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bir Le tr Bred man Wi HOCy
Oo run I f faf rum if re
Wuh

Dear Gingerbread Man,

Why do you run away from everyone?

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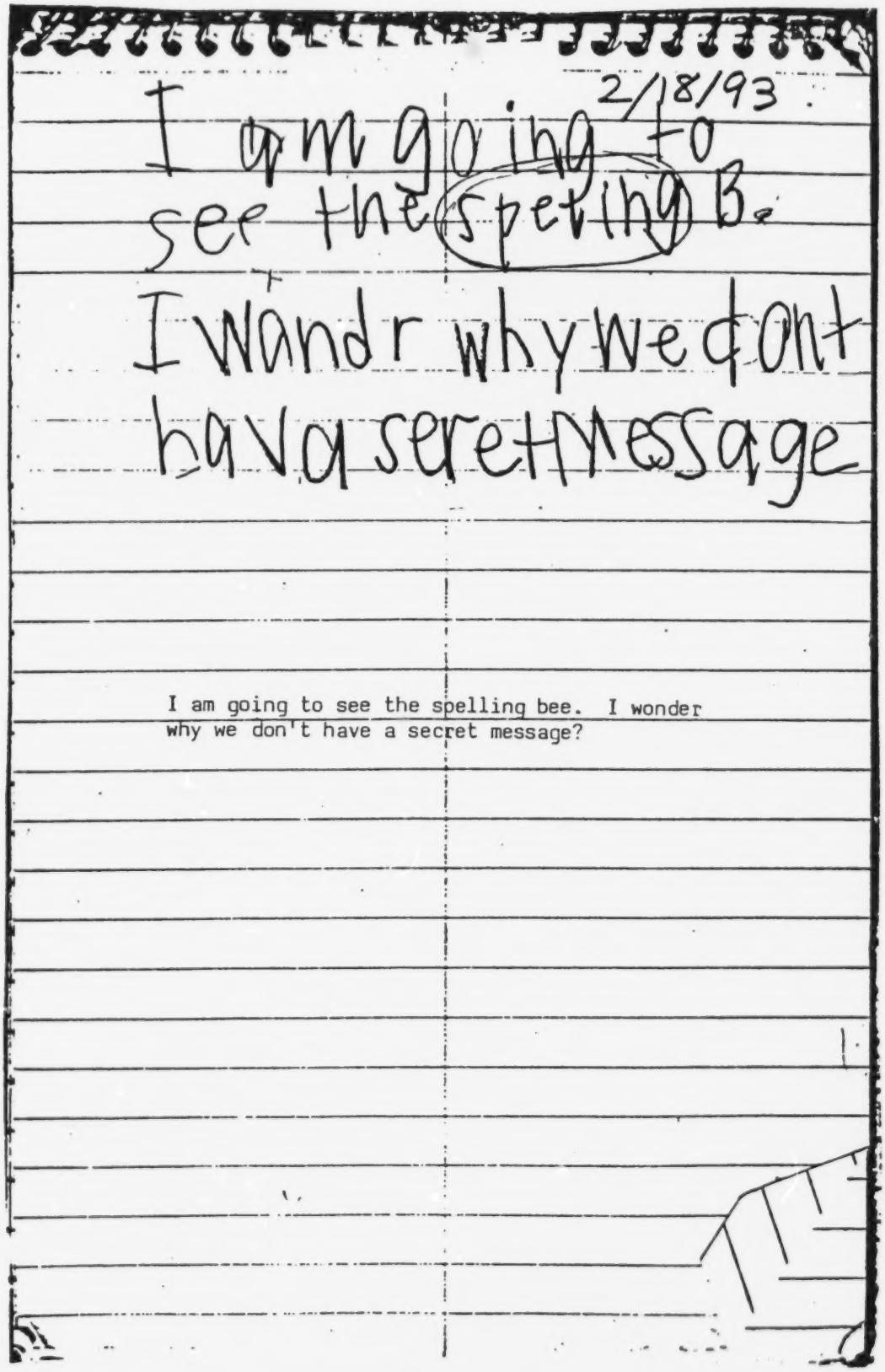
Figure 8



I am going to see the spelling bee. I wonder why we don't have a secret message?

Figure 9

From Your Pen pal in Utah

May 4, 1993

Dear Edward,

My name is not it is

I am in 2nd grade. The

weather is good but it depends

what season it is. My best frien

is Aron. Utah is fun. I like to

play basket ball, baseball, soccer,

and football, Who is your teacher?

Mine is Mrs. Wright.

Your friend,

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